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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,291	09/22/2005	Hermann Goebels	037068.55856US	6376

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EXAMINER	
NGUYEN, VU Q	
ART UNIT	PAPER NUMBER
3657	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/524,291	GOEBELS ET AL.	
	Examiner	Art Unit	
	VU Q. NGUYEN	3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-21,24 and 26-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-21,24 and 26-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13-21, 24, and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Document GB 2270130 (GB '130) in view of U.S. Patent No. 6371573 (Goebels et al.), and further in view of U.S. Patent No. 6741922 (Holler).

Regarding claim 13, GB '130 discloses in Fig. 2a, a pressure regulator module (100) for a vehicle pneumatic braking system for a wheel-slip-dependent controlling or regulating of braking pressures applied to two separate working connections (18, 19), the pressure regulator module (100) comprising: a two-way valve assembly (1) having two conduits (left and right sides of valve assembly 1), including one relay valve (3, 4), respectively, for each conduit, each relay valve (3, 4) having a control input (5); wherein a respective solenoid control valve (30, 30') (in the form of a proportional valve) is assigned to the control input (5) of each relay valve (3, 4); wherein the solenoid control valves (30, 30'), together with only one additional solenoid control valve (12) coupled on an input side of the module (100), connect the control input (5) of the respective relay valve (3, 4) with at least one of a bleeding system (11, 11'), a control pressure (13, 14), and a compressed-air reservoir (17); a controlling and regulating unit (2) operatively

configured to control the only one additional solenoid control valve (12) to connect the control input (5) of the respective relay valve (3, 4) with the compressed air reservoir (17) (when valve 12 is in an energized position) for adapting the speed of rotation of a driven wheel, which initially slips during acceleration, to the speed of rotation of a non-slipping wheel, and the solenoid control valve (30, 30') assigned to a slipping wheel is controlled by the controlling and regulating unit (2) to connect the compressed air reservoir (17) to the control input (5) of the respective relay valve (3, 4) (when valve 12 is in an energized position).

Regarding claim 13, GB '130 does not disclose expressly that the respective solenoid control valves (30, 30') are in the form of a 3/2-way valve having two switching positions; and the solenoid control valve (30 or 30') assigned to a slipping wheel is controlled by the controlling and regulating unit (2) in a timed manner depending on the slip rate of the slipping wheel and a change in velocity of said slipping wheel, whereby the solenoid control valve (30 or 30') assigned to the slipping wheel is alternatively switched back and forth between a pressure buildup position and a pressure reduction position by the controlling and regulating unit (2). Instead, the respective solenoid control valves (30, 30') are in the form of proportional valves having continuously changing positions.

Goebels et al. disclose in Fig. 7, the use of a solenoid control valve (55), in the form of a 3/2-way valve having two switching positions, assigned to the control input of a relay valve (57). Goebels et al. further disclose that the solenoid control valve can be controlled in a timed manner depending on the slip rate of a slipping wheel and a

change in velocity of the slipping wheel (see Figs. 1, 3-5), whereby the solenoid control valve is alternatively switched back and forth between a pressure buildup position and a pressure reduction position (column 5, lines 1-17).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the proportional valves of the valve assembly taught by GB '130 with 3/2-way valves as taught by Goebels et al. The motivation for doing so would have been to utilize a less-expensive way of increasing, reducing, and holding pressure. Furthermore, 3/2-way valves are easier to control because they only have two switching positions, whereas proportional valves have continuously changing positions (current is varied in an analog manner as opposed to digital). Since 3/2-way valves are capable of increasing pressure, reducing pressure, and holding pressure by alternatively switching back and forth between a pressure buildup and pressure reduction position as taught by Goebels et al. (abstract; column 5, lines 1-17; column 7, line 22 - column 8, line 41), 3/2-way valves are capable of functioning in a similar manner to the proportional valves taught by GB '130. Thus, it would have been obvious to a person of ordinary skill in the art to use 3/2-way valves, which are cheaper and easier to control, instead of proportional valves. Furthermore, one of ordinary skill in the art would control the 3/2-way valves in a proper manner by switching valve positions in a timed manner, as taught by Goebels et al., in order to effectively perform a desired wheel slip control.

Regarding claim 13, GB '130 also does not disclose expressly an acceleration sensor for detecting a lateral acceleration of the vehicle, the acceleration sensor being integrated in the controlling and regulating unit, wherein the controlling and regulating

unit determines a risk of overturning the vehicle, based on the detected lateral acceleration, and a driving speed of the vehicle is reduced and the risk of overturning is eliminated by activating the only one additional solenoid control valve and individually controlling the solenoid control valves independently of a reaction of a driver to an automatic anti-lock braking of the vehicle.

Holler teaches an electronically monitored rollover protection system, which can be integrated in an anti-lock braking system (ABS) (see title, abstract). Holler discloses an acceleration sensor (442) for detecting a lateral acceleration of a vehicle, the acceleration sensor being integrated in a controlling and regulating unit (412) (see Fig. 4), wherein the controlling and regulating unit determines a risk of overturning the vehicle, based on the detected lateral acceleration (see Fig. 5, step 516; column 7, lines 10-15), and a driving speed of the vehicle is reduced and the risk of overturning is eliminated by activating and controlling the ABS (comprising valves 414, 420, 430) independently of a reaction of a driver to an automatic anti-lock braking of the vehicle (see Fig. 5; column 7, lines 44-62).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the pressure regulator module taught by GB ‘130 to include control of rollover/overturning based on lateral acceleration as taught by Holler. The motivation for doing so would have been to provide protection against rollover/overturning, which can be incorporated on an existing ABS, thereby increasing safety and providing more versatile and robust control.

Regarding claim 14, see GB '130 and Fig. 2a, as well as page 11, last paragraph.

Regarding claim 15, see Goebels et al. and disclosure that, in a non-energized normal position, the solenoid control valve (55) switches a control pressure (54) through to a control input of the relay valve (57) and, in an energized position, switches the control input of the relay valve (57) through to a bleeding system (53) (Figs. 6 and 7; column 7, line 22 - column 8, line 41).

Regarding claim 16, see Goebels et al. and disclosure of the solenoid control valve (55) having a pressure buildup position (non-energized) and a pressure reduction position (energized). The solenoid control valve (55) can also hold a pressure at a brake cylinder (59) by alternatingly switching back and forth in the pressure buildup position (non-energized) and the pressure reduction position (energized) under the control of an electronic controlling and regulating unit (19) (abstract; column 5, lines 1-17; column 7, line 22 - column 8, line 41).

Regarding claims 17-19, see GB '130 and Fig. 2a.

Regarding claim 20, see GB '130 and Fig. 2a.

Regarding claim 21, see GB '130 and page 12, last paragraph - page 14, first new paragraph.

Regarding claim 24, see GB '130 and Fig. 2a.

Regarding claim 29, the Examiner submits that the only one additional solenoid control valve (12) of GB '130 can be actuated independently of the control pressure (13, 14) (by means of the controlling and regulating unit 2 and compressed air reservoir 17).

Regarding claims 26 and 30, the claims are rejected for at least the same reasons as set forth above.

Regarding claim 27, GB '130 does not disclose expressly only a single central bleeding connection. Instead, there are two bleeding connections (11, 11'). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the pressure regulator module as taught by GB '130 to have only a single central bleeding connection. The motivation for doing so would have been to merely reduce the number of operative connections, thereby simplifying the module to facilitate costs and manufacture.

Regarding claim 28, the claim is rejected for at least the same reasons as set forth above.

Response to Arguments

Applicant's arguments filed 03/18/2009 have been fully considered but they are not persuasive.

Applicant argues that GB '130 includes no description or indication with reference to Fig. 2a, if and how a wheel slip control system would be realized, and that the only embodiment designated as suitable for wheel slip control in GB '130 is the embodiment shown in Fig. 1. The Examiner disagrees, and sees no clear reason why the embodiment of Fig. 2a would not be suitable for wheel slip control. As a variant of the embodiment of Fig. 1, as well as having means for controlling an amount of reservoir pressure via conduit 17 to the brake cylinders of different wheels (by separately

controlling valves 12, 30, 30'), independently of a control pressure (driver demand) via conduits 13, 14, the Examiner submits that the embodiment of Fig. 2a is at least capable of realizing wheel slip control.

Applicant further argues that the timed controlling of a 3/2-way solenoid control valve disclosed by Goebels is not timed control for connecting a reservoir pressure to the relay valves, as claimed, but instead, the 3/2-way valve 55 connects a control pressure of a brake valve 61 to the relay valve 57. However, the Examiner should clarify that Goebels is not relied upon to teach the specific operative connections of the 3/2-way valve within the brake system, but instead, is relied upon merely to teach that a 3/2-way valve can be used in place of a proportional valve. Thus, if the proportional valves 30, 30' of GB '130 were modified by 3/2-way valves, the Examiner submits that the 3/2-way valves would connect a reservoir pressure via conduit 17 to the relay valves 3, 4 (when valve 12 is energized; see Fig. 2a of GB '130). The 3/2-way valves would further be controlled in a timed manner as taught by Goebels, to provide wheel slip control independently of a control pressure (driver demand) via conduits 13, 14.

In response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a

reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The Examiner submits that such modification is within the skill level of one of ordinary skill in the art and meets the relevant limitations of the claims, as amended. Thus, the Examiner maintains the rejection of the claims as set forth above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VU Q. NGUYEN whose telephone number is (571) 272-7921. The examiner can normally be reached on Monday through Friday, 11:30 AM to 8:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. Q. N./
Examiner, Art Unit 3657

/Robert A. Siconolfi/
Supervisory Patent Examiner, Art Unit 3657